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For: Method and System for Inclusion Hash...
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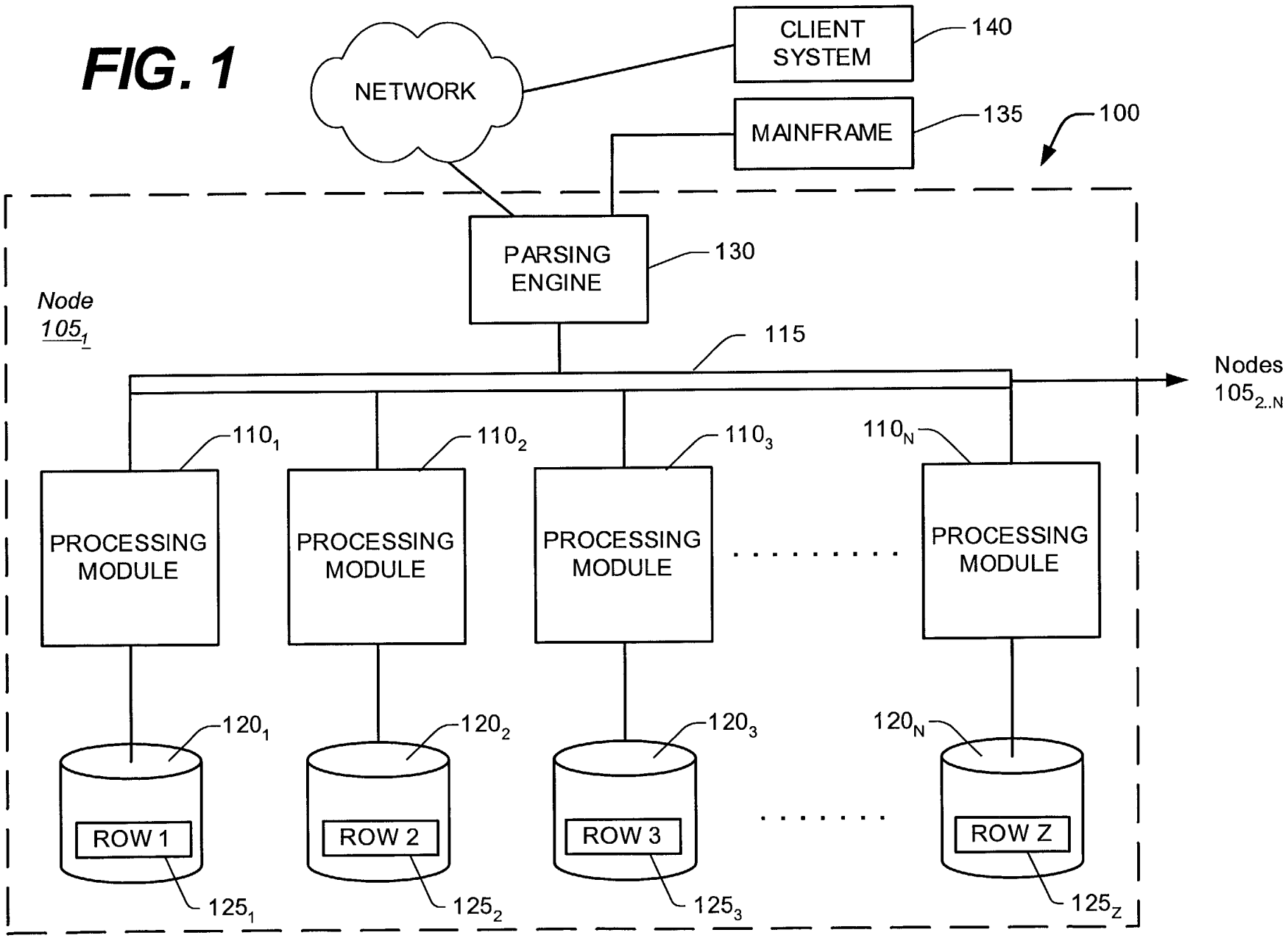
Sheet 1 of 7

FIG. 1



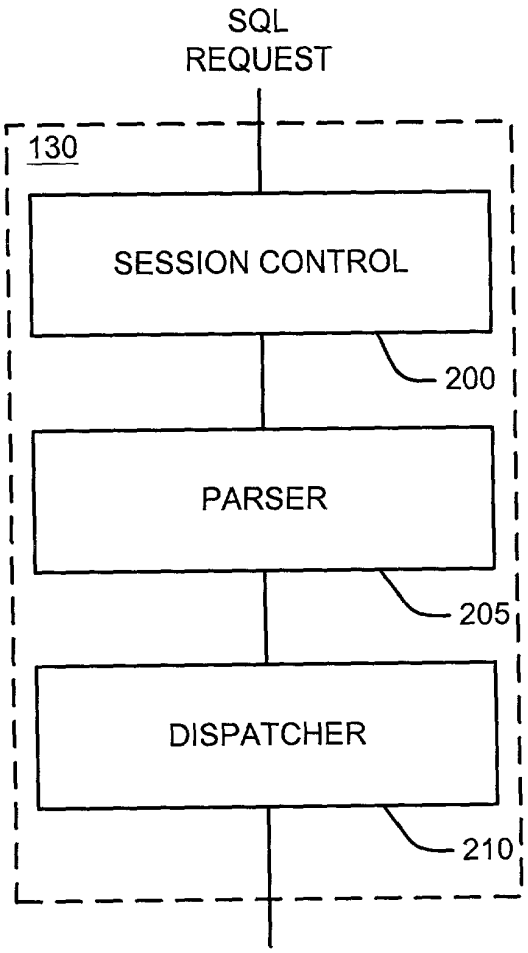

SQL
REQUEST
130
SESSION CONTROL
200
PARSER
205
DISPATCHER
210

FIG. 2

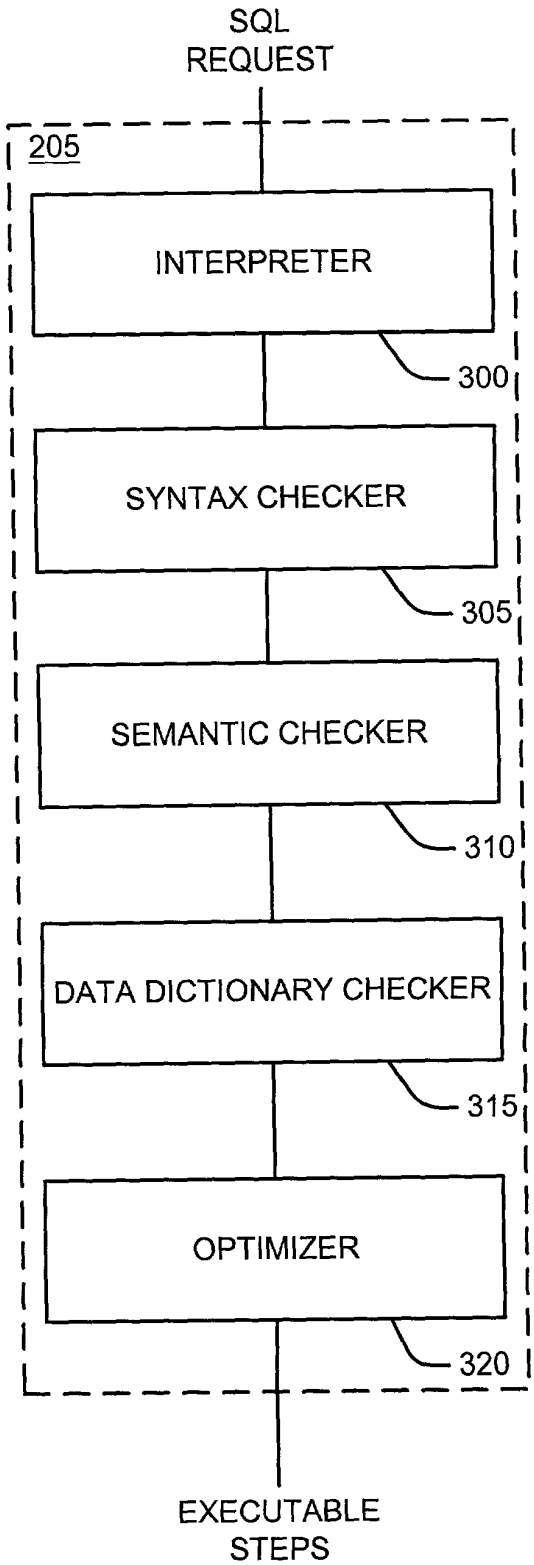

SQL
REQUEST
205
INTERPRETER
300
SYNTAX CHECKER
305
SEMANTIC CHECKER
310
DATA DICTIONARY CHECKER
315
OPTIMIZER
320
EXECUTABLE
STEPS

FIG. 3

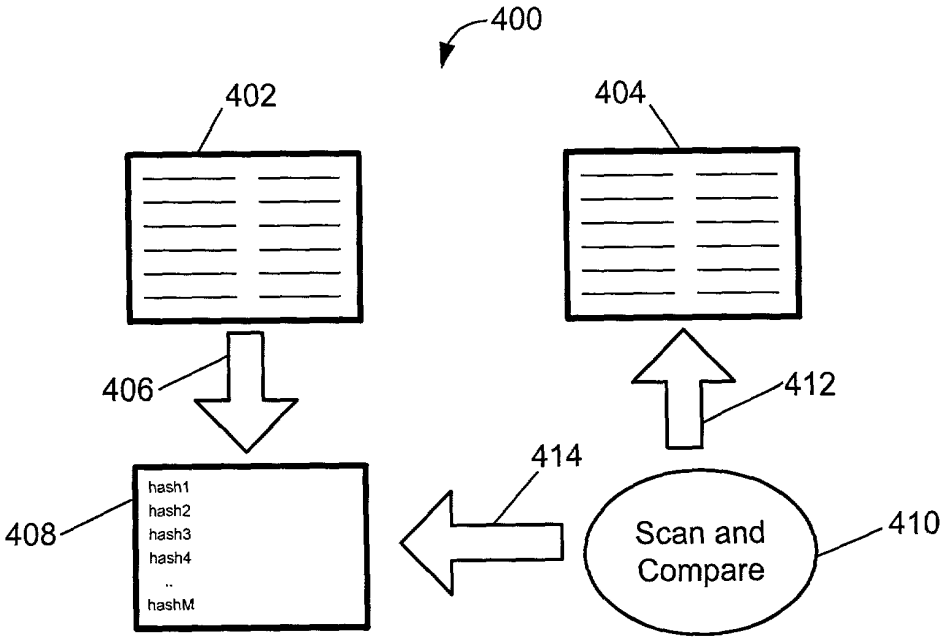

400
402
404
406
412
414
hash1
hash2
hash3
hash4
..
hashM
408
Scan and
Compare
410

FIG. 4

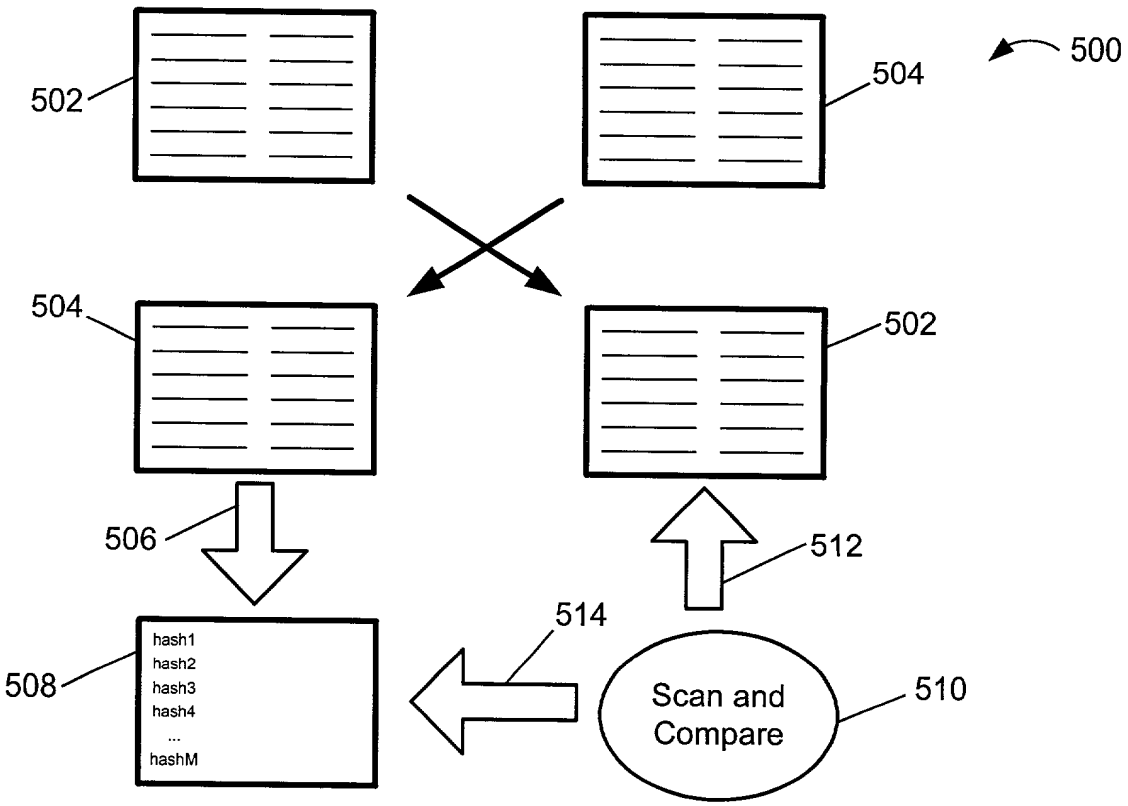

500
502
504
504
502
506
512
514
508
hash1
hash2
hash3
hash4
...
hashM
Scan and Compare
510

FIG. 5

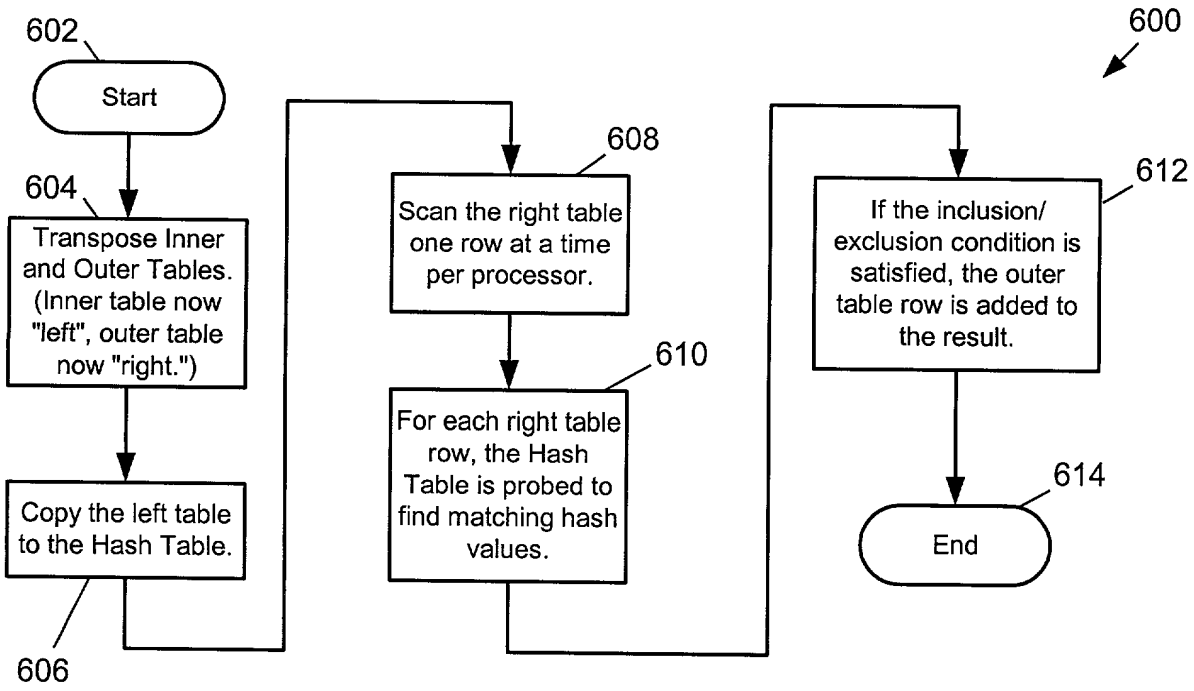

600
602
Start
604
Transpose Inner and Outer Tables. (Inner table now "left", outer table now "right.")
Copy the left table to the Hash Table.
606
608
Scan the right table one row at a time per processor.
610
For each right table row, the Hash Table is probed to find matching hash values.
612
If the inclusion/ exclusion condition is satisfied, the outer table row is added to the result.
614
End

FIG. 6

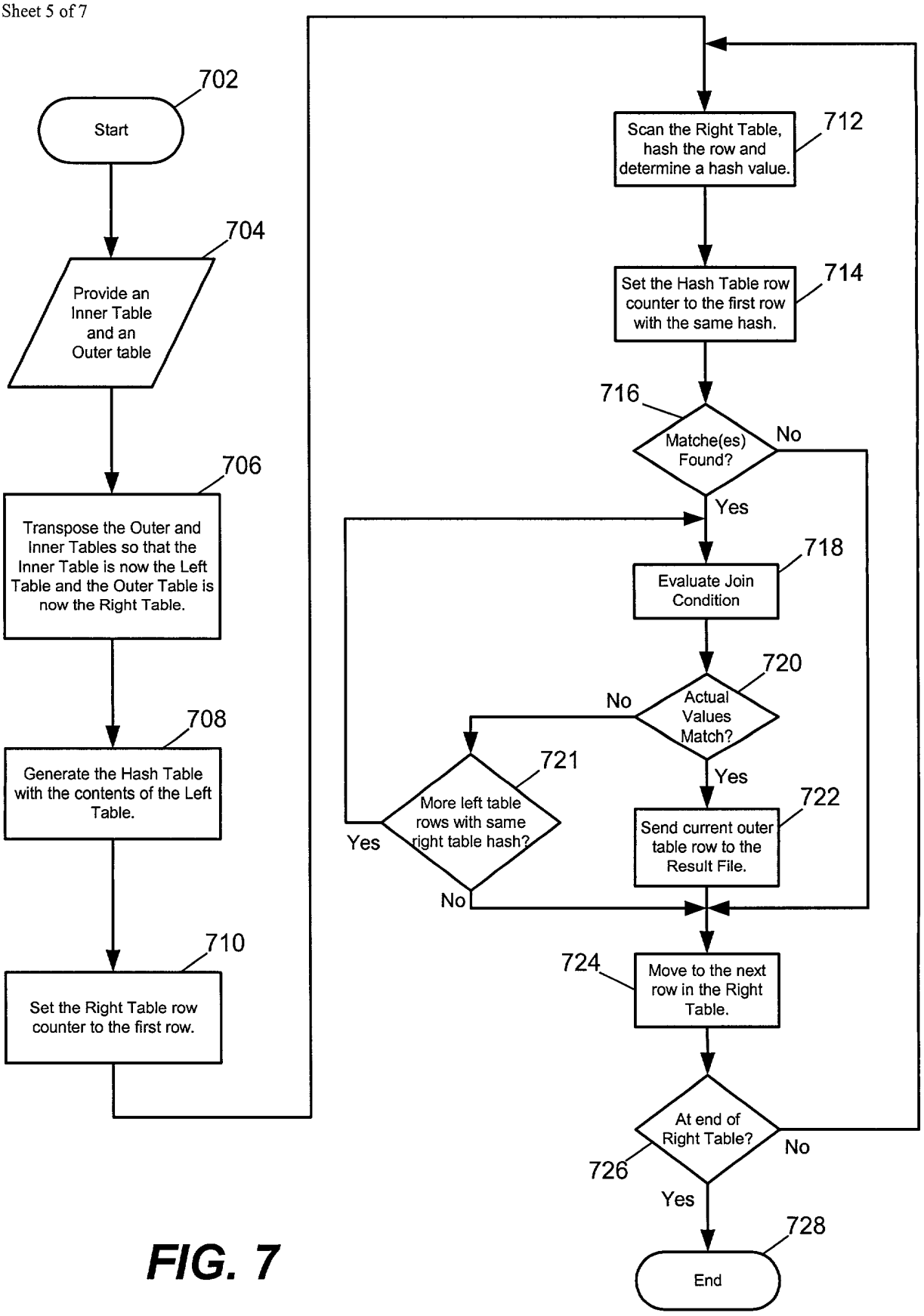

702
Start
704
Provide an Inner Table and an Outer table
706
Transpose the Outer and Inner Tables so that the Inner Table is now the Left Table and the Outer Table is now the Right Table.
708
Generate the Hash Table with the contents of the Left Table.
710
Set the Right Table row counter to the first row.
712
Scan the Right Table, hash the row and determine a hash value.
714
Set the Hash Table row counter to the first row with the same hash.
716
Matche(es) Found?
No
Yes
718
Evaluate Join Condition
720
Actual Values Match?
No
Yes
721
More left table rows with same right table hash?
Yes
No
722
Send current outer table row to the Result File.
724
Move to the next row in the Right Table.
726
At end of Right Table?
No
Yes
728
End

FIG. 7

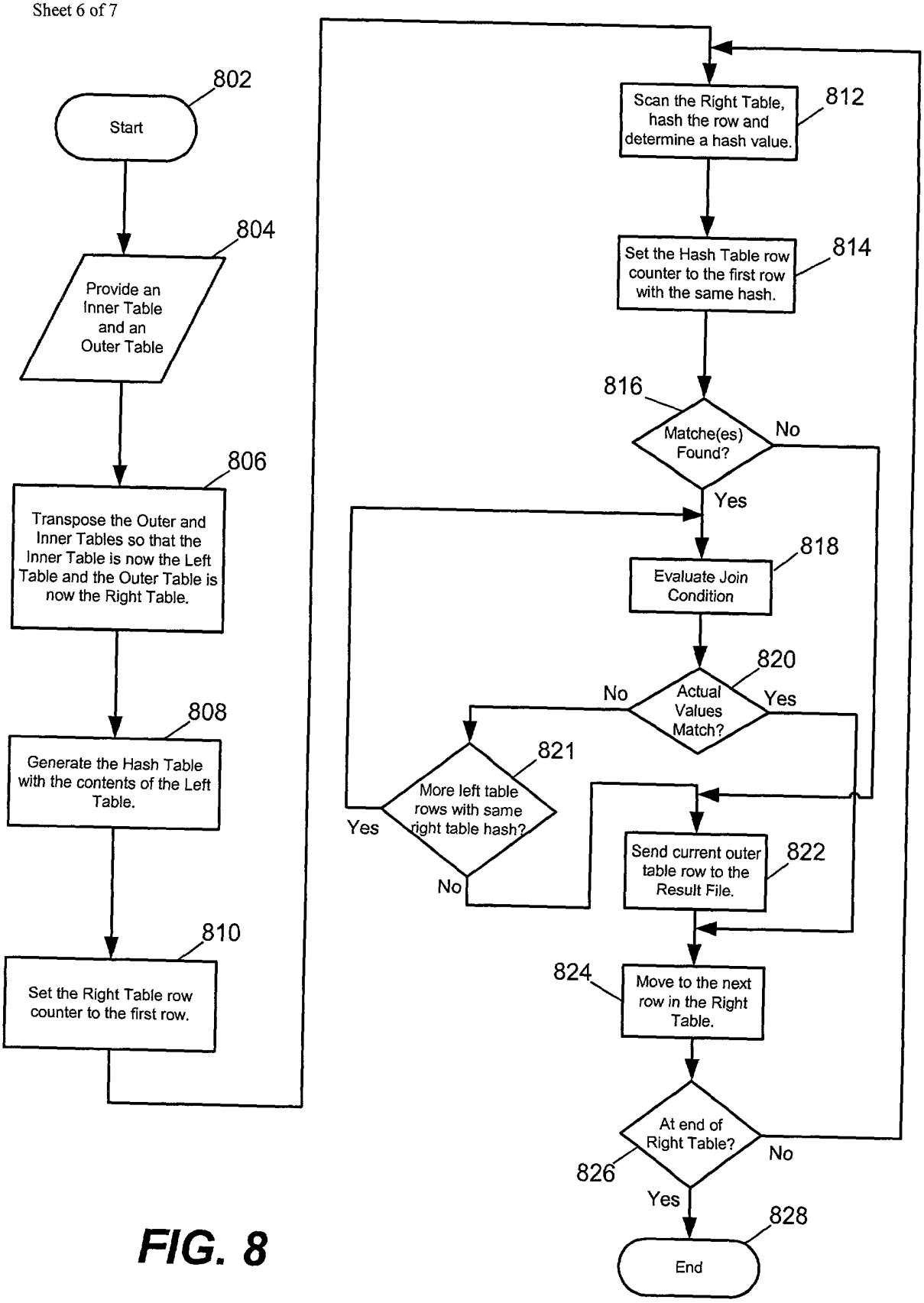

802
Start
804
Provide an Inner Table and an Outer Table
806
Transpose the Outer and Inner Tables so that the Inner Table is now the Left Table and the Outer Table is now the Right Table.
808
Generate the Hash Table with the contents of the Left Table.
810
Set the Right Table row counter to the first row.
812
Scan the Right Table, hash the row and determine a hash value.
814
Set the Hash Table row counter to the first row with the same hash.
816
Matche(es) Found?
No
Yes
818
Evaluate Join Condition
820
Actual Values Match?
No
Yes
821
More left table rows with same right table hash?
Yes
No
822
Send current outer table row to the Result File.
824
Move to the next row in the Right Table.
826
At end of Right Table?
No
Yes
828
End

FIG. 8

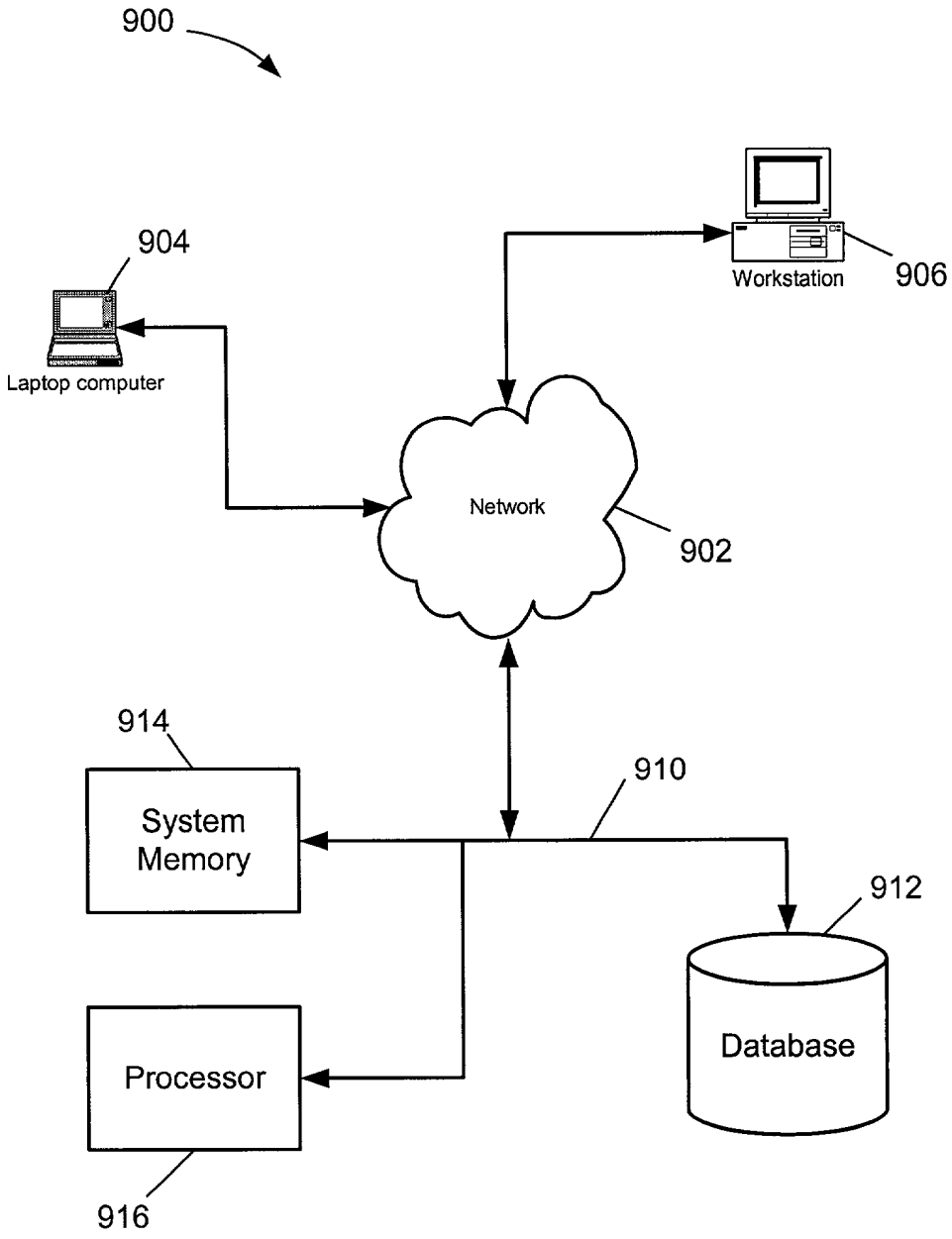

900
904
Laptop computer
Workstation
906
Network
902
914
System Memory
910
912
Database
Processor
916

FIG. 9